

Figure 1

2023-03-29 15:01:11

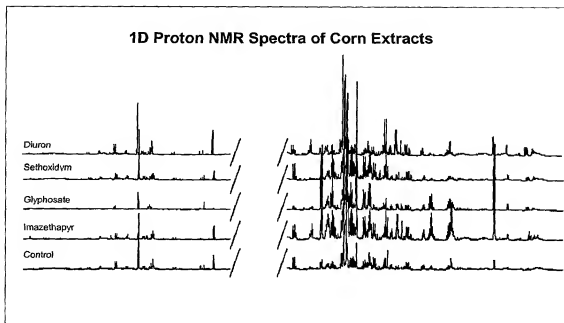


Figure 2

1051615.01182

Batch_Spectrum	Seq. No.	Treatment	NetworkOutput: Node/Node Value	Network Output	Assignment
Training Set					
na022400_02	2	Control	Control	Control	Control
na022400_03	3	Control	Control	Control	Control
na030100_06	5	Control	0.99998	0.00002	Control
na030100_09	29	Control	0.99998	0.00002	Control
na030100_11	34	PURSUIT	0	0.00001	Control
na030100_14	37	PURSUIT	0	0.00004	Control
na030100_17	40	PURSUIT	0	0.00004	PURSUIT
na030100_19	42	PURSUIT	0	0.00004	PURSUIT
na030900_07	50	Control	0.99995	0.00005	Control
na030900_08	52	PURSUIT	0.99993	0.00007	Control
na030900_09	54	Control	0.99995	0.00005	Control
na030900_10	55	Sethoxydim	0.00002	0.00002	Sethoxydim
na030900_13	60	Foul	0.00002	0.00004	Foul
na030900_15	62	Glyphosate	0.00007	0.00004	Glyphosate
na030900_16	63	Glyphosate	0.00006	0.00004	Glyphosate
na030900_20	67	Glyphosate	0.00004	0.00004	Glyphosate
na030900_21	68	Duron	0.00007	0.00004	Duron
Test Set					
na022400_01	1	Control	0.99998	0	Control
na022400_03	3	Control	0.99995	0	Control
na022400_04	4	Control	0.99998	0	Control
na022400_05	5	Control	0.99995	0	Control
na022400_07	7	Control	0.99998	0	Control
na022400_08	8	Control	0.99997	0	Control
na022400_09	9	PURSUIT	0	0.02733	Unknown
na022400_10	10	PURSUIT	0.00085	0.00116	Unknown
na022400_11	11	PURSUIT	0.00085	0.00141	Unknown
na022400_12	12	PURSUIT	0.00016	0.0025	Unknown
na022400_13	13	PURSUIT	0.00013	0.0025	Unknown
na022400_14	14	PURSUIT	0.00013	0.00238	Unknown
na022400_15	15	PURSUIT	0	0.10029	Unknown
na022400_16	16	PURSUIT	0.00005	0.00469	Unknown
na022400_17	17	PURSUIT	0.00114	0.00127	Unknown
na022400_18	18	PURSUIT	0.00091	0.00139	Unknown
na022400_19	19	PURSUIT	0.00048	0.00185	Unknown
na022400_20	20	PURSUIT	0.00044	0.00184	Unknown
na022400_21	21	PURSUIT	0.00043	0.00184	Unknown
na022400_22	22	PURSUIT	0.00046	0.00146	Unknown
na022400_23	23	PURSUIT	0.00086	0.00123	Unknown
na030100_01	24	Control	0.99996	0	Control
na030100_02	25	Control	0.99997	0	Control
na030100_03	26	Control	0.99997	0	Control
na030100_04	27	Control	0.99995	0	Control
na030100_05	28	Control	0.99995	0	Control

Figure 3a

Training Set	Control	PURSUIT	Sethoxydim	Glyphosate	Diuron	Foul	Assignment
na030100_07	Control	0.99598	0	0.00002	0.00002	0.00001	Control
na030100_08	Control	0.99596	0	0.00001	0.00001	0.00001	Control
na030100_10	PURSUIT	0	0.99996	0.00003	0.00005	0.00002	PURSUIT
na030100_12	PURSUIT	0	0.99996	0.00001	0.00003	0.00002	PURSUIT
na030100_13	PURSUIT	0	0.99996	0.00002	0.00004	0.00002	PURSUIT
na030100_15	PURSUIT	0	0.99994	0.00003	0.00005	0.00002	PURSUIT
na030100_16	PURSUIT	0	0.99994	0.00003	0.00005	0.00002	PURSUIT
na030100_18	PURSUIT	0	0.99995	0.00002	0.00004	0.00002	PURSUIT
na030100_20	PURSUIT	0	0.99995	0.00003	0.00004	0.00003	PURSUIT
na030100_21	PURSUIT	0	0.99995	0.00004	0.00004	0.00003	PURSUIT
na030100_22	PURSUIT	0	0.99995	0.00002	0.00003	0.00002	PURSUIT
na030600_12	Sethoxydim	0.00005	0.0003	0.99701	0	0.00003	Sethoxydim
na030600_14	Glyphosate	0.00008	0.00004	0.00002	0.99994	0	Glyphosate
na030600_17	Glyphosate	0.00005	0.00005	0.00003	0.99993	0.00001	Glyphosate
na030600_18	Foul	0.00005	0.00005	0.00003	0.99993	0.00003	Foul
na030600_19	Diuron	0.00034	0.00003	0.00002	0	0.99989	Diuron
na030600_22	Diuron	0	0.00005	0.00003	0	0.99989	Diuron
na030600_23	Diuron	0.00065	0.00014	0.00043	0	0.92715	Diuron
na030600_24	Diuron	0.00002	0.00003	0	0.99993	0.00003	Diuron
na030600_24	Diuron	0.00002	0.00003	0	0.99993	0.00003	Diuron
na022400_02	Control	0.99996	0	0.00001	0.00003	0.00002	Control
na030100_05	Control	0.99998	0	0	0.00002	0.00001	Control
na030100_06	Control	0.99998	0	0	0.00002	0.00001	Control
na030100_08	Control	0.99998	0	0.00001	0.00004	0.00001	Control
na030100_11	PURSUIT	0	0.99996	0.00001	0.00003	0.00002	PURSUIT
na030100_14	PURSUIT	0	0.99996	0.00001	0.00004	0.00002	PURSUIT
na030100_17	PURSUIT	0	0.99995	0.00002	0.00003	0.00002	PURSUIT
na030100_19	PURSUIT	0	0.99995	0.00001	0.00004	0.00002	PURSUIT
na030600_04	Control	0.99993	0	0.00002	0.00002	0.00001	Control
na030600_06	Sethoxydim	0.00002	0.00001	0.99993	0.00001	0.00001	Sethoxydim
na030600_10	Sethoxydim	0.00002	0.99993	0.00002	0.00001	0.00004	Sethoxydim
na030600_13	Foul	0.00001	0.00001	0	0.00001	0.99991	Foul
na030600_15	Glyphosate	0.00007	0.00004	0.00001	0.99992	0	Glyphosate
na030600_16	Glyphosate	0.00006	0.00004	0.00003	0.99994	0	Glyphosate
na030600_20	Diuron	0.00004	0.00004	0.00002	0	0.99993	Diuron
na030600_21	Diuron	0.00007	0.00004	0.00002	0	0.99994	Diuron

Figure 3b

SNNS result file		V1.4-3D					
Training file		na022400					
Test file na040400							
No. of patterns:		24					
No. of input units:		1080					
No. of output units:		6					
Startpattern:		1					
Endpattern:		24					
Teaching output included							
Treatment:	1.1 Control						
Target:	1	0	0	0	0	0	0
Output:	0.99954	0.00045	0.00001	0.00001	0.00001	0.00001	0.00001
Treatment:	2.1 Control						
Target:	1	0	0	0	0	0	0
Output:	0.99936	0.00065	0.00001	0.00001	0.00001	0.00001	0.00001
Treatment:	3.1 Control						
Target:	1	0	0	0	0	0	0
Output:	0.99951	0.00047	0.00001	0.00001	0.00001	0.00001	0.00001
Treatment:	4.1 Control						
Target:	1	0	0	0	0	0	0
Output:	0.99963	0.00037	0.00001	0.00001	0.00001	0.00001	0.00001
Treatment:	5.1 Chlorsulfuron						
Target:	0	0	0	0	0	0	0
Output:	0.00159	0.99843	0	0.00001	0	0	0
Treatment:	6.1 Chlorsulfuron						
Target:	0	0	0	0	0	0	0
Output:	0.00806	0.99165	0	0	0	0	0
Treatment:	7.1 Chlorsulfuron						
Target:	0	0	0	0	0	0	0
Output:	0.00334	0.99669	0	0	0	0	0
Treatment:	8.1 Chlorsulfuron						
Target:	0	0	0	0	0	0	0
Output:	0.00014	0.99985	0	0.00001	0	0	0
Treatment:	9.1 Chlorsulfuron						
Target:	0	0	0	0	0	0	0
Output:	0.00667	0.99376	0	0	0	0	0
Treatment:	10.1 Imazamethabenz						
Target:	0	0	0	0	0	0	0
Output:	0.00044	0.99955	0	0	0	0	0
Treatment:	11.1 Imazamethabenz						
Target:	0	0	0	0	0	0	0
Output:	0.00013	0.99987	0	0	0	0	0
Treatment:	12.1 Imazamethabenz						
Target:	0	0	0	0	0	0	0
Output:	0.00208	0.99798	0	0.00001	0.00001	0.00001	0

Figure 4a

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SNNS result file						
Training file						
Test file na040400						
No. of patterns:						
No. of input units:						
No. of output units:						
Startpattern:						
Endpattern:						
Teaching output included						
Treatment:	13.1 Imazamethabenz					
Target:	0	0	0	0	0	0
Output:	0.00223	0.99755	0	0	0	0
Treatment:	14.1 Imazamethabenz					
Target:	0	0	0	0	0	0
Output:	0.06789	0.93484	0	0	0	0
Treatment:	15.1 Sulfometuron					
Target:	0	0	0	0	0	0
Output:	0.00046	0.99955	0	0	0	0
Treatment:	16.1 Sulfometuron					
Target:	0	0	0	0	0	0
Output:	0.00102	0.999	0	0.00001	0	0
Treatment:	17.1 Sulfometuron					
Target:	0	0	0	0	0	0
Output:	0.00194	0.99813	0	0.00001	0	0
Treatment:	18.1 Sulfometuron					
Target:	0	0	0	0	0	0
Output:	0.00013	0.99987	0	0	0	0
Treatment:	19.1 Sulfometuron					
Target:	0	0	0	0	0	0
Output:	0.00014	0.99985	0	0	0	0
Treatment:	20.1 Imazapyr					
Target:	0	0	0	0	0	0
Output:	0.0018	0.998	0	0	0	0
Treatment:	21.1 Imazapyr					
Target:	0	0	0	0	0	0
Output:	0.00031	0.99968	0	0.00001	0	0
Treatment:	22.1 Imazapyr					
Target:	0	0	0	0	0	0
Output:	0.00175	0.99791	0	0	0	0
Treatment:	23.1 Imazapyr					
Target:	0	0	0	0	0	0
Output:	0.00018	0.9998	0	0	0	0
Treatment:	24.1 Imazapyr					
Target:	0	0	0	0	0	0
Output:	0.06579	0.93074	0	0	0	0

Figure 4b

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Class	Control	AHAS	ACCase	EPSPS	PS II	Necrotic*	HPD	PROTOX	Carotenoid	PSI	Microtubule	PDS	Uncoupler	Auxin-like	Auxin Transp	DHP	Acetamide	PSII_c1	PSII_c2	PSII_c3	Glutamine	Mitosis	Unknown	No Class
Control	54																							3
AHAS		30																						
ACCase			6																					
EPSPS				4																				
PS II					6																			
Necrotic*						2																		
HPD							10																	
PROTOX								12																
Carotenoid									12															
PSI										9														
Microtubule											7													
PDS												5												
Uncoupler													9											
Auxin-like														11										
Auxin Transp															8									
DHP																8								
Acetamide																	6							
PSII_c1																		9						
PSII_c2																			1	10				
PSII_c3																				12				
Glutamine																					22			
Mitosis																						8		
Unknown																								
NoClass																								

Rows: Teaching Input; Columns: Classification for Nineteen MOAs
 (23 Classes, Including "Control" = Untreated Plants, 1 "Sparse" Class, and "Unknown" Added by NNNS)

Figure 5

CLASS	Control	Plants																						
		AHAS	ACCase	EPSPS	Not Used	Necrotic*	HPPD	PROTOX	Carotenoid	PSI	Microbubble	Uncoupler	Auxin-like	Auxin Transp	DHP	Acetamide	PSII_c1	PSII_c2	PSII_c3	Glutamine	Mitosis	Spare	Unknown	# Plants
Control	Control	27	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	31
	AHAS	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
	ACCase	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	EPSPS	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Not Used	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Necrotic*	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	HPPD	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
	PROTOX	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	Carotenoid	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	PSI	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
	Microbubble	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6
	PDS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3
	Uncoupler	0	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	0	0	0	0	0	1	6
	Auxin-like	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	2	6
	Auxin Transp	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	2	6
	DHP	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	6
Acetamide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	3	
PSII_c1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	2	6	6	
PSII_c2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	1	10	0	
PSII_c3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	
Glutamine	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	12	0
Mitosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	6	6	
Spare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NoClass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rows: Teaching Inputs; Columns: Classifications for Nineteen MOAs
 (23 Classes, Including "Control" = Untreated Plants, 1 "Spare" Class, and "Unknown" Added by SNNS)

Figure 6

MOA	Control	AHAS	ACCase	EPSPS	PS II	Necrotic*	HPPD	PROTOX	Carotenoid	PSI	Microtubule	PDS	Uncoupler	Auxin-like	Auxin Transp	DHP	Acetamide	PSII_c1	PSII_c2	PSII_c3	Glutamine	Mitosis	Spare	Unknown
Control	92	100	100	100	100	100	83	100	100	75	58	83	75	92	67	8	100	75	8	83	100	92	67	83
AHAS																								53
ACCase																								17
EPSPS																								25
PS II																								33
Necrotic*																								17
HPPD																								25
PROTOX																								33
Carotenoid																								17
PSI																								25
Microtubule																								83
PDS																								25
Uncoupler																								25
Auxin-like																								25
Auxin Transp																								25
DHP																								25
Acetamide																								25
PSII_c1																								25
PSII_c2																								25
PSII_c3																								25
Glutamine																								25
Mitosis																								25
Spare																								25
Unknown																								25

Rows: Teaching Input, Columns: Classification as Percentage of Total Plants Tested for Nineteen MOAs (23 Classes, including 'Control' = Untreated Plants, 1 'Spare' Class, and 'Unknown' = Added by NNNS)

Figure 7

*Necrotic = dead or decaying plant

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CLASS	Class	Control	AHAS	ACCase	EPSPs	Not Used	Necrotic*	HPPD	PROTOX	Carotenoid	PSI	Microtubule	PDS	Uncoupler	Auxin-like	Auxin Transp	DHP	Acetamide	PSII_c1	PSII_c2	PSII_c3	Chitinase	Mitosis	Spare	Unknown
	Control	0	87					3																	6
	AHAS	1		100																					
	ACCCase	2			100																				
	EPSPS	3				100																			
	Not Used	4																							
	Necrotic*	5					100																		
	HPPD	6						50																	
	PROTOX	7							100																
	Carotenoid	8								100															
	PSI	9									67														
	Microtubule	10										33													
	PDS	11											33												
	Uncoupler	12												67			17								
	Auxin-like	13													67										
	Auxin Transp	14														50	17								
	DHP	15															17								
	Acetamide	16																67							
	PSII_c1	17																	50	17					
	PSII_c2	18																							
	PSII_c3	19																							
	Glutamine	20																							
	Mitosis	21																							
				</																					

Rows: Training Input, Columns: Classification as Percentage of Total Plants Tested for Nineteen MOAs
 (23 Classes, including "Control" = Untreated Plants, 1 "Spare" Class, and "Unknown" Added by SNNS)

Figure 8